

12-22-03
Tyco 17689 (AT 20958-49)
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hempel et al. : Art Unit: 2817
Serial No.: 10/067,435 : Examiner: Bettendorf, J.
Filed: February 4, 2002 :
For: COMPACT MULTI-ELEMENT :
CASCADE CIRCULATOR :
:

**CERTIFICATE OF MAILING BY EXPRESS MAIL TO
THE COMMISSIONER OF PATENTS AND TRADEMARKS**

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Date of Mailing: April 21, 2003

I certify that the documents listed below:

- Amendment Transmittal form (3 pgs.), in duplicate
- Amendment, including Appendix A – Submission of Marked Up Claims, in response to Office Action dated February 24, 2003 (7 pgs.)
- Return Post Card

are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above in an envelope addressed to: Box: Non-Fee Amendment, Commissioner for Patents, Washington, D.C. 20231-0001.



Dean D. Small, Reg. No. 34,734
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, MO 63102-2740
(314) 621-5070

PATENT
Tyco 17689

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APR 21 2003
Applicant: Hempel, et al. : Art Unit: 2817
Serial No.: 10/067,435 : Examiner: Bettendorf, J.
Filed: February 24, 2002 :
For: COMPACT MULTI-ELEMENT :
CASCADE CIRUCALTOR :
:

**Box: Non-Fee Amendment
Commissioner for Patents
Washington, D.C. 20231**

TRANSMITTAL

1. Transmitted herewith is:

**Amendment, including Appendix A – Submission of Marked Up Claims, in
response to the Office Action dated February 24, 2003 (7 pgs.); Certificate of
Express Mail (1 pg.); Return Post Card**

STATUS

2. Applicant

Claims small entity status.
 is other than a small entity.

CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is, on the date shown below, being:

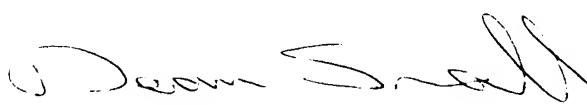
MAILING

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Date: April 21, 2003

FACSIMILE

Transmitted by facsimile to the Patent and Trademark Office


Dean D. Small
Reg. No. 34,734

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.

(complete (a) or (b), as applicable)

- (a) Applicant petitions for an extension of time under 37 C.F.R. 1.136
(Fees: 37 C.F.R. 1.17(a)-(d) for the total number of months checked below:)

Extension for response within:	Other than small entity Fee	Small entity Fee (if applicable)
first month	\$ 110.00	\$ 55.00
Second month	\$ 410.00	\$ 205.00
Third month	\$ 930.00	\$ 465.00
Fourth month	\$1,450.00	\$ 725.00
fifth month	\$1,970.00	\$ 985.00

Fee: \$ _____

If an additional extension of time is required, please consider this a petition therefor.

(Check and complete the next item, if applicable)

An extension of _____ months has already been secured. The fee paid therefor \$_____ Is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ _____

OR

- (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

(Col. 1)	(Col. 2)	(Col. 3)	SMALL ENTITY	OTHER THAN SMALL ENTITY
CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NO. PREVIOUSLY PAID FOR	PRESNT EXTRA	ADDITIONAL RATE FEE	ADDITIONAL RATE FEE
TOTAL INDEP.	MINUS		x \$9 = \$	x \$18 = \$
	MINUS		x \$42 = \$	x \$84 = \$
	FIRST PRESENTATION OF MULTIPLE DEP. CLAIM		+ \$130 = \$	+ \$280 = \$
			TOTAL ADDITIONAL FEE \$	TOTAL ADDITIONAL FEE \$

(a) No additional fee for claims is required.

OR

(b) _____ Total additional fee for claims required \$

FEE PAYMENT

5. _____ Attached is a check in the sum of \$_____

_____ Charge Deposit Account No. 01-2384 the sum of \$
A duplicate of this transmittal is attached.

FEE DEFICIENCY

6. If any additional extension and/or fee is required, charge Deposit Account No. 01-2384.

AND/OR

If any additional fee for claims is required, charge Deposit Account No. 01-2384.

7. _____ Other:



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APR 7 2003

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AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

In response to the Office Action dated February 24, 2003, please amend the above-identified patent application as follows:

IN THE CLAIMS

1. (Once Amended) A radio frequency/microwave junction-type circulator, comprising:

a plurality of signal ports;

a plurality of junctions connected in cascade and configured to provide a plurality of transmission paths between the signal ports, each junction including a conductor element patterned to correspond to at least a portion of the plurality of transmission paths;

a ferrite component configured to overlay the plurality of junctions;

a permanent magnet arranged in relation to the ferrite component so as to generate a magnetic field in the ferrite component, thereby causing non-reciprocal operation of the plurality of transmission paths between the signal ports; and

at least a first pole piece disposed between the permanent magnet and the ferrite component.